

REMARKS

The office action of 06-28-2005 has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is requested. Claims 1 through 14 remain in this case. Claims 1 and 8 are independent, and are hereby amended. Support for the amendment are found throughout the application.

Rejection(s) under 35 U.S.C. §103

Claims 1-14 were rejected under 35 U.S.C. 103(a) as allegedly unpatentable over U.S. Patent No. 5,581,376 to Harrington (hereinafter merely Harrington) in view of U.S. Patent No. 6,157,937 to Wakasugi (hereinafter merely Wakasugi), further in view of U.S. Patent No. 5,712,922 to Loewenthal et al (hereinafter merely Loewenthal).

Claim 1 recites, *inter alia*:

“providing an input image with a plurality of pixels;
converting the input image to an output image using an N-
dimensional conversion table with a plurality of nodes, the N-
dimensional conversion table being composed of a plurality of at least
four subsets each containing color information adapted to be
simultaneously obtained;

storing odd-indexed nodes and even-indexed nodes respectively on
separate RAMS for each dimension of the conversion table;

....
thereby expediting input image conversion using a single access of
memory for interpolation of data points.” (emphasis added)

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As understood by Applicants, Harrington relates to an input device that has signals (R_s , G_s , B_s) generated by an image input terminal. The signals are in turn converted to colorimetric values R_c , G_c , B_c . The colorimetric values processed by an image processing unit to generate address entries to a lookup table which stores a set of transform coefficients with which the R_c , G_c , B_c values may be processed to convert them to C_x , M_x , Y_x , K_x colorant signals or any multi-dimensional output color space, which include but are not limited to CMYK or spectral data. Values which are not directly mapped from the table are determined using tetrahedral interpolation over a hexagonal lattice. The hexagonal lattice is formed by offsetting by a half unit every other row of one of its dimensions relative to another dimension. The offset provides closer packing of sample points that define more regular tetrahedrons to reduce relative interpolation errors. The packing also allows for easy lookup table access and simple tests to determine which tetrahedron contains a desired value. However, in Harrington the number of RAMs does not extend the implementation to more than two rams. The LUT or lookup table is frequently described as N-dimensional therein but never does Harrington state that the table is split into 2^n rams to accelerate the lookup process. For example, Harrington discloses "retrieving for each pixel a set of output color values corresponding to nodes adjacent to the pixel in the conversion table" [see: col. 3, ln. 39 – col 4, ln. 20]. As can be seen, in Harrington, the term "table" is stated in singular form. This necessarily alludes to the presence of a single table requiring multiple access to retrieve the values for all neighboring points.

As understood by Applicants, Wakasugi relates to an interpolation circuit for calculating the value of an arbitrary point by interpolation using the values of points on the boundaries of a domain which surrounds the arbitrary point. The circuit comprises a partial product generation circuit composed of multiplexers and a partial product addition circuit for adding partial products generated by the partial product generation circuit together.

As understood by Applicants, Lowenthal relates to neural network based optical character recognition technique that is presented for identifying characters in a moving web. Image acquisition means defines an imaging window through which the moving web passes such that the characters printed thereon can be imaged. Classification data is extracted and accumulated for each printed web character passing through the imaging window. A light source provides transmissive illumination of the web as it is being imaged. A neural network accelerator is coupled to the image acquisition means for intelligent processing of the accumulated classification data to produce therefrom printed character classification information indicative of each corresponding character imaged. A processor is coupled to the accelerator for converting the classification information into the appropriate ASCII character code. The technique is particularly useful for reading dot-matrix-type characters on a noisy, semi-transparent background at fast real-time rates. A neural network algorithm based recognition method is also described.

Applicants respectfully submits that the combination of Harrington, Wakasugi, and Loewenthal does not teach or suggest providing an input image with a plurality of pixels; converting the input image to an output image using an N-dimensional conversion table with a plurality of nodes, the N-dimensional conversion table being composed of a plurality of at least four subsets each containing color information adapted to be simultaneously obtained; storing odd-indexed nodes and even-indexed nodes respectively on separate RAMS for each dimension of the conversion table; thereby expediting input image conversion using a single access of memory for interpolation of data points, all as claimed in claim 1.

For similar reasons, claim 8 is deemed patentable as well.

Reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion


Applicants believe the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' attorney would advance the prosecution of the case to finality, he is invited to telephone the undersigned at the number given below.

"Recognizing that Internet communications are not secured, I hereby authorize the PTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file."

Respectfully submitted,

WU & CHEUNG, LLP

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